

## 4. CORRIDOR DEFINITION

The needs assessment phase of the study identified the North-South corridor which connects SR 202L via the Williams Gateway corridor to the Florence/Coolidge area. This section presents the preliminary recommended North-South corridor definition considering engineering, environmental, jurisdiction, and public perspectives opportunities and constraints.

### 4.1 Description of Preliminary North-South Corridor Definition

As a final alignment has not been selected for the MAG Williams Gateway corridor, the definition is flexible enough to accommodate whichever alignment is ultimately selected by ADOT and MAG for the Williams Gateway freeway.

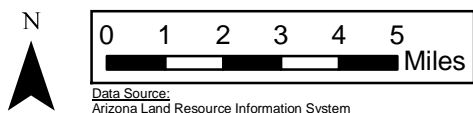
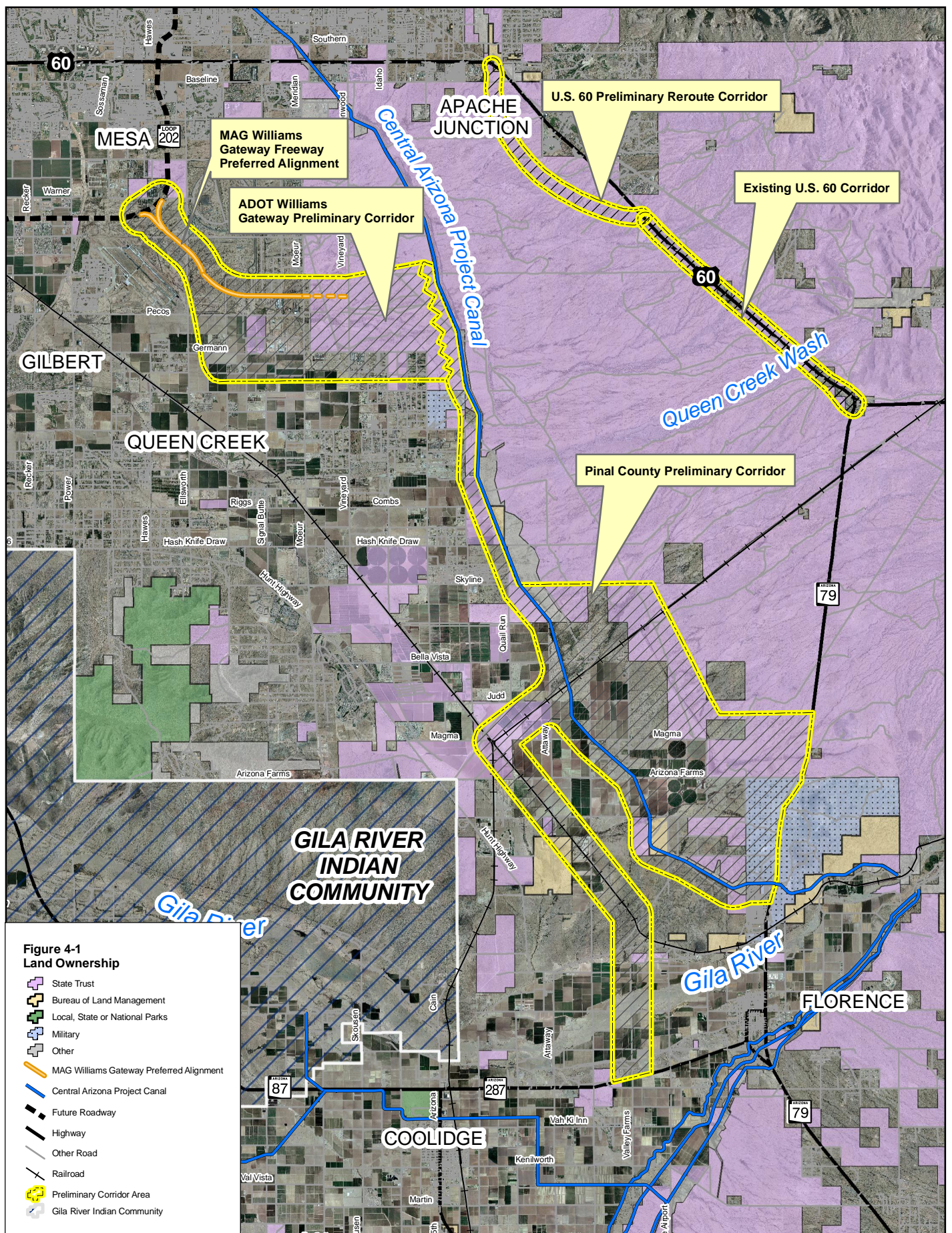
The North-South corridor definition begins at a future intersection with the Williams Gateway corridor at the CAP. The corridor definition proceeds in a south-southeasterly direction along the CAP until the intersection with the Magma Arizona Railroad. The definition in this area is narrowly focused, approximately ¼ mile wide, and lies directly adjacent to the 1000 feet corridor that has been identified for the SRP 500 kV line.

As the definition reaches the Arizona Magma railroad, it broadens and becomes less specific. A future corridor alignment could be identified within this definition that extends to SR-79 or alternatively to SR-287. A connection to SR-79 would be less impactful to future master planned communities, but may provide less relief and benefit to future north-south arterials within the Florence area. In addition, this definition would not provide an additional, and much needed, crossing of the Gila River. A corridor connection to SR-79 could be located near the Magma Flood Retarding Structure. This land is currently undeveloped, and is mostly within the jurisdiction of the Arizona State Land Department.

The recent approval of the SRP 500 kV transmission line alignment provides an opportunity to connect the North-South corridor to SR-287, generally following the same alignment as the 500 kV transmission line. This corridor definition passes through several proposed master planned communities, but provides additional advantage to a connection to SR-79. Namely, this definition enables the collocation of a transportation corridor into a consolidated corridor that impacts less land overall than would separate transmission line and transportation corridors. In addition, a connection to SR-287 better positions the corridor for future continuation south of SR-287. A connection to SR-287 is more centrally located within the study area and thus may provide more relief to future arterials. Finally, a connection to SR-287 provides an additional crossing of the Gila River.

An outline of the preliminary corridor definition is superimposed upon land ownership, master planned communities, drainage, environmental information in **Figures 4-1 through 4-4**.

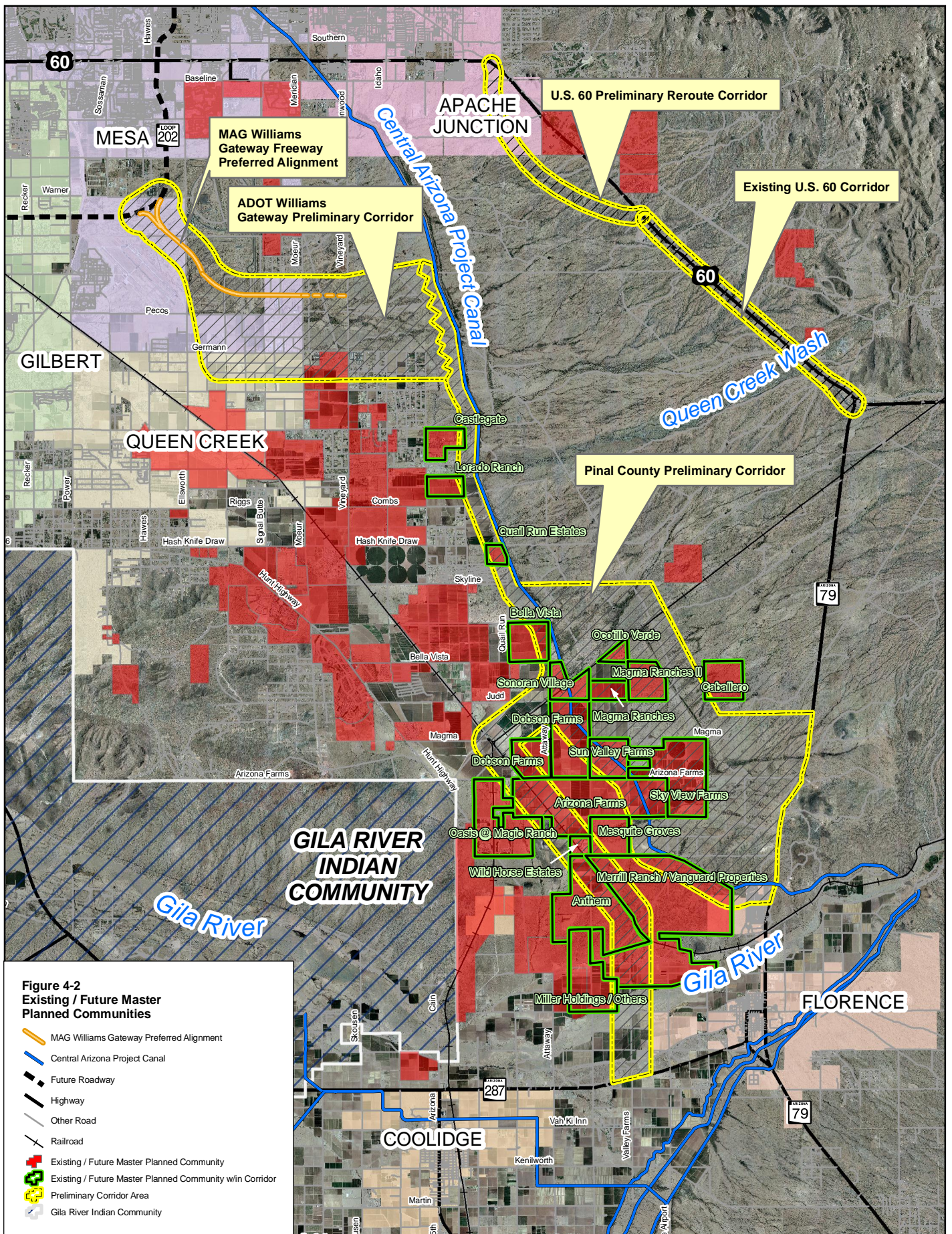




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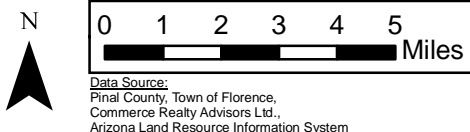




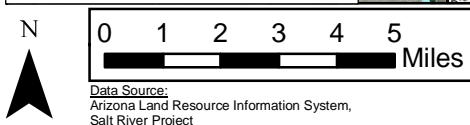
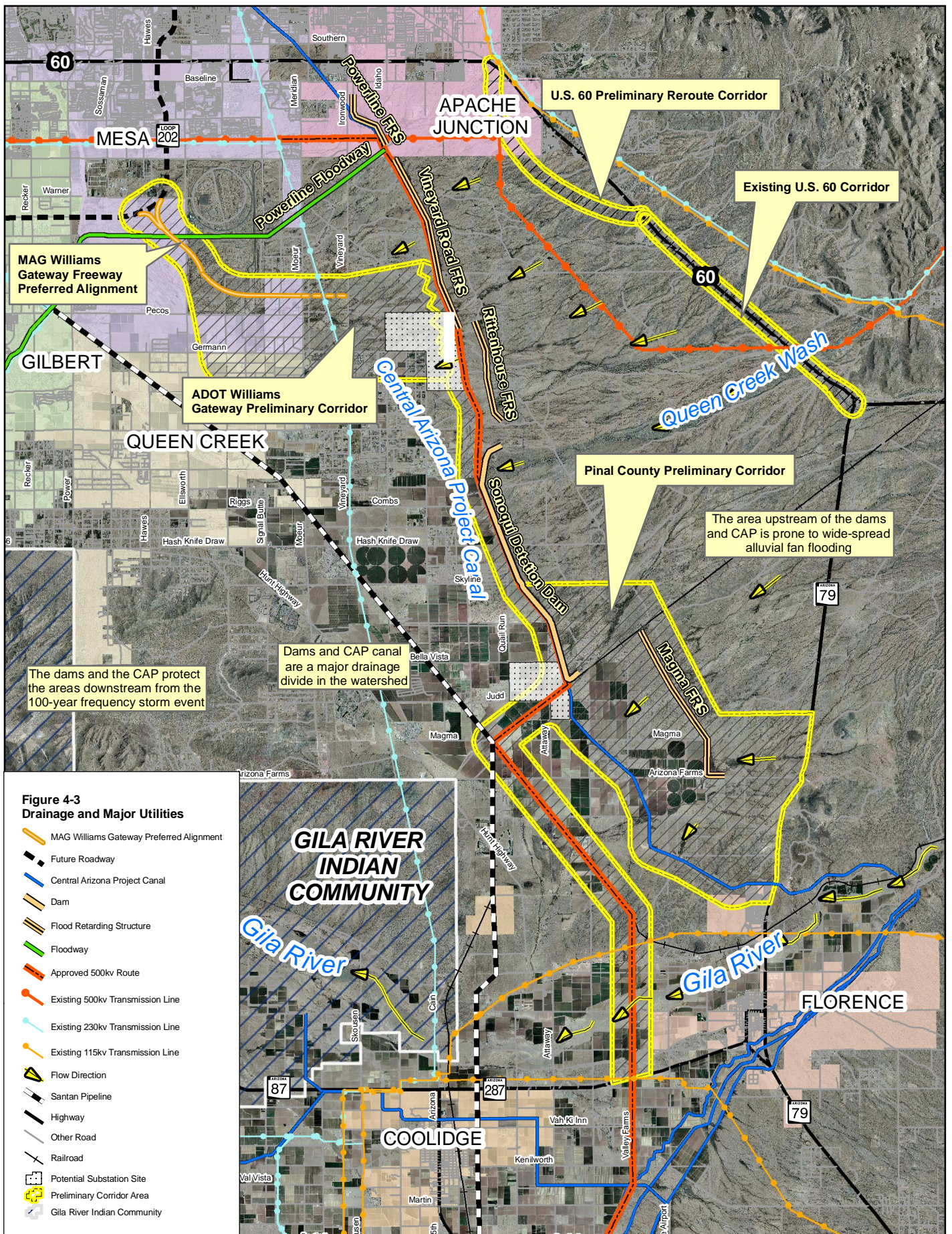


**Figure 4-2  
Existing / Future Master  
Planned Communities**

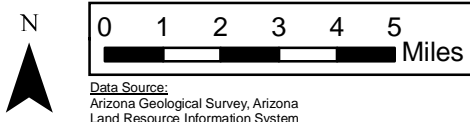
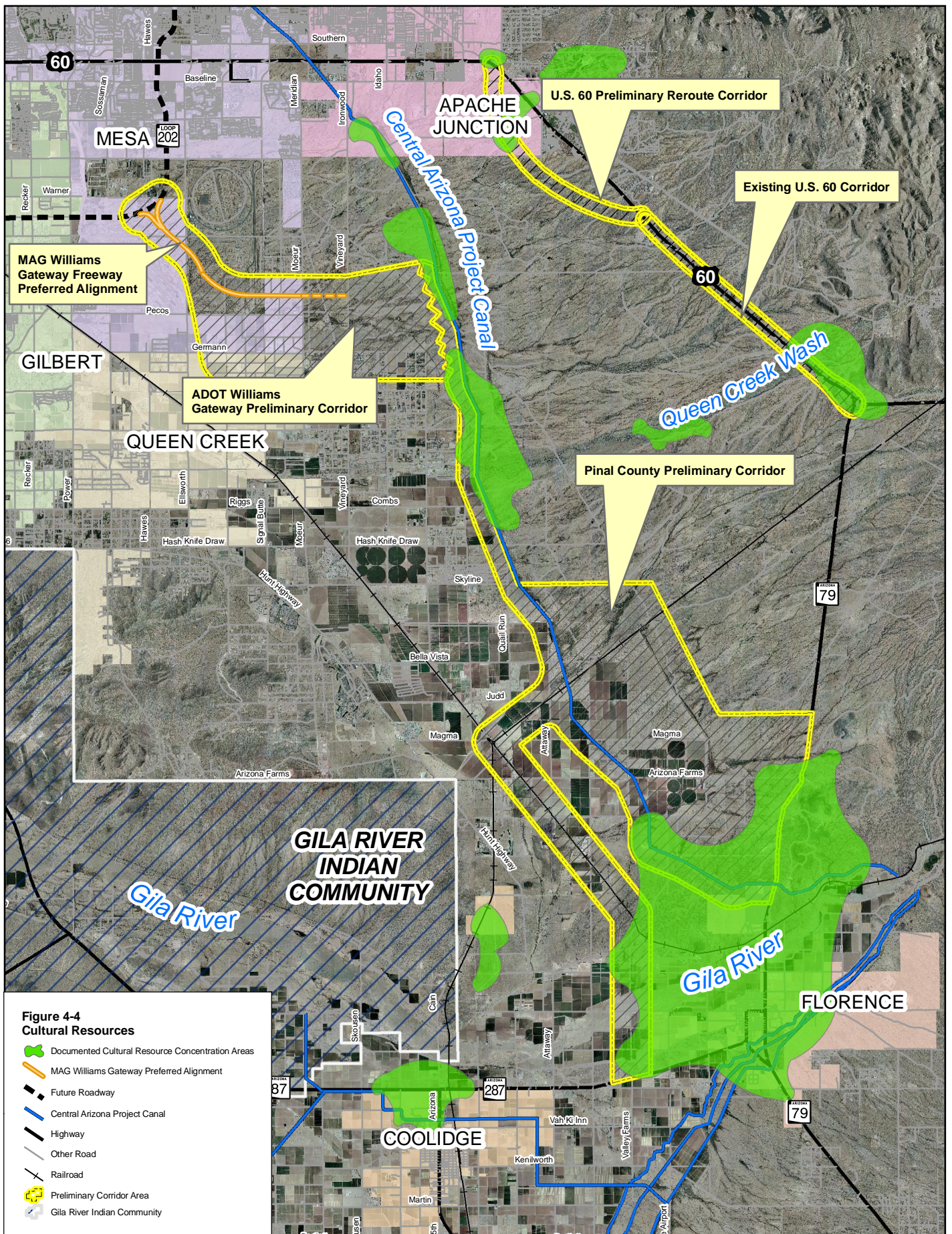
- MAG Williams Gateway Preferred Alignment
- Central Arizona Project Canal
- Future Roadway
- Highway
- Other Road
- Railroad
- Existing / Future Master Planned Community
- Existing / Future Master Planned Community w/in Corridor
- Preliminary Corridor Area
- Gila River Indian Community











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## 4.2 Estimate of Probable Cost

Corridor planning-level cost estimates have been developed. Cost estimates reflect the total highway development including the costs of planning and engineering studies, design, roadway construction, and right-of-way acquisition. The cost estimates provide an approximation that is suitable for use in programming the next steps of highway development.

### 4.2.1 Planning, Engineering, and Construction Costs

Planning and engineering cost are based on per mile unit costs for constructing limited access roadway sections. The per mile construction costs include provisions for typical drainage improvements, structures, environmental mitigation, and other related infrastructure.

A recent report, *Performance Audit of Arizona Department of Transportation: Review of the Oversight and Management of the Maricopa County Regional Freeway System, June 2005*, provides average construction cost averages for freeway construction in the Phoenix Metropolitan area. The report states that capital construction costs for a selected number of segments in the MAG Regional Freeway System varied between \$2.38 and \$3.78 million per lane mile. For a 6-lane freeway, this is approximately \$14 to \$22 million per centerline mile. This figure does not include right-of-way, design, and landscaping costs. The audit report states that these costs are comparable with the construction cost standards adopted by the California Department of Transportation (CalTrans), where the actual costs per lane mile should be within the \$5 million range.

In April of 2004 the Maricopa Association of Governments reported that the total cost per Regional Freeway System centerline mile was \$39 million. This figure represents all costs associated with the design, property acquisition, utilities, landscape and construction of the freeway. Input received from ADOT staff indicates that future costs will be higher due to rising construction and right-of-way costs. ADOT staff has suggested that recent projects indicate that costs in the near future will be closer to \$42 million per centerline mile due to increased land prices and escalating construction costs.

The MAG Williams Gateway Corridor, as estimated by the *MAG Williams Gateway Corridor Alignment Study, July 2005*, is projected to cost between \$243 million to \$333 million. This study does not provide a detailed break-down in costs, but this corridor would equate to an estimated unit cost of \$54 million per mile for this 4.5 mile corridor. The study states that this estimated cost is within the amount allocated by the MAG Regional Transportation Plan, implying that this estimate includes total development costs including design, drainage facilities, system and service interchanges and right-of-way.

Estimates or probable cost developed by Kimley-Horn and Associates for other projects cite a unit construction cost of \$8.0 - \$10 million for a 6-lane freeway. This does not include engineering and other pre-design activities, right-of-way acquisition, and other associated costs.

Based upon the various information sources cited above, an estimate of probable cost for a 6-lane North-South corridor extending from approximately the Frye Road alignment to either SR-79 or SR-287 is presented in **Table 4-1**. The estimate of probable cost assumes that the corridor would range from approximately 17 miles to 21 miles in length, depending upon the final alignment that is selected. A corridor that connects to SR-79 could range from 17 to 19 ½ miles in length, while a corridor connecting to SR-287 could be

approximately 22 miles in length. The estimate assumes that the corridor would include 1 system interchange and 6 service interchanges at a spacing of approximately 2 miles.

**Table 4-1 – Estimate of Probable Cost by Source**

Item	Units	Number of Units	Estimated Unit Probable Cost	Total Estimated Probable Cost
6-Lane Freeway Facility	Miles	17	\$10 million	\$170 million
		22		\$220 million
System Interchange	Each	1	\$50 - \$150 million	\$75 - \$150 million
Service Interchange	Each	6	\$15 million	\$90 million
Roadway Subtotal				\$335 - \$460 million
Construction Contingency	20% of Roadway Construction Cost			\$67 - \$92 million
Construction Administration	15% of Roadway Construction Cost			\$50 - \$69 million
Construction Total				\$452 - \$621 million
Pre-Design Studies	5% of Construction Total Cost			\$23 - \$31 million
Design Costs	10% of Construction Total Cost			\$45 - \$62 million
Total North-South Corridor Cost (excluding right-of-way)				\$520 - \$714 million
Total North-South Corridor Cost per mile (excluding right-of-way)				\$30 - 32 million

#### 4.2.2 Right-of-Way Acquisition Costs

As land continues to appreciate each year within the study area, right-of-way costs will inevitably increase. It is not an unreasonable assumption that right-of-way costs could exceed construction costs. While the majority of land within the corridor definition study area is currently undeveloped, plans for developing large tracts for master planned communities within the study area are well underway. Some are currently under construction. As such, right-of-way costs for future corridors are nearly impossible to estimate with any degree of certainty. Furthermore, much of the land being considered for the corridor definition is within the jurisdiction of Arizona State Land Department which typically auctions land to the highest bidder.

Recent data available from the Arizona State Land Department indicate that the average sales price per auctioned acre of land was \$187,200 in 2004. (In 2004 the Land Department held 20 auctions across the State and sold about 1800 acres of State Trust Land for \$337 Million) In areas of strong development pressure the average sales price has been significantly exceeded. As an example, on July 13, 2005, \$92.2 Million were paid for 288 acres of Arizona State Trust Land in the Desert Ridge Master Planned Community. This amounts to more than \$320,000 an acre. Future corridor development may be challenged by the potentially high cost for right-of-way acquisition on State Trust Land.

Information provided by stakeholder committee members indicated that land within the study area is currently selling for approximately \$45,000 per acre. Assuming that the corridor definition will require 300 feet of right-of-way, an estimate of probable cost for

required right-of-way is presented in **Table 4-2**. This estimate does not include right-of-way required for system and service interchanges.

**Table 4-2 – Potential right-of-way costs (in 2004 land values)**

Corridor Length	Right-of-way	Total Acres	Unit Cost / Acre	Total Right-of-Way Cost
17 miles	300 feet	618 acres	\$45,000	\$27.8 million
			\$187,200	\$115.7 million
22 miles	300 feet	800 acres	\$45,000	\$36 million
			\$187,200	\$149.8 million
Potential right-of-way cost per mile				\$1.6 – \$6.8 million